UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,289	08/27/2003	Allan J. Wildey	900260.90200	5484

26710 7590 07/27/2007
QUARLES & BRADY LLP
411 E. WISCONSIN AVENUE
SUITE 2040
MILWAUKEE, WI 53202-4497

EXAMINER	
MANCHO, RONNIE M	
ART UNIT	PAPER NUMBER
3663	

MAIL DATE	DELIVERY MODE
07/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/649,289	WILDEY ET AL.	
	Examiner	Art Unit	
	Ronnie Mancho	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4,12,15,19,20,23 and 24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4, 12, 15, 19, 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Newly submitted claims 4, 12, 15, 19, 20 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 4, 12, 15, 19, 20, drawn to a steering system for an articulated vehicle, classified in class 701 subclass 41

II. Claims 23 and 24 are drawn to a method for steering an articulated vehicle, classified in class 180, subclass 204, 6.24, 6.2.

The inventions are distinct, each from the other because of the following reasons:

3. Inventions (II) and (I) are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process as claimed can be practiced by another and materially different apparatus or by hand. That is instead of using processors, computers to practice the process of steering the vehicle, the vehicle could be steered manually without using computers and processors.

4. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

5. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 23 and 24 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 4, 12, 15, 19, 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In amended claim 4, the phrase, "a sensitivity selector including a gear sensor" is new matter. The examiner submits that the applicant disclosure (figs. 1; sections 30 and 31) shows a an operator *input device 110 which includes a steering sensitivity selector.* Applicant's disclosure further illustrates *a gear selector sensor 80.* Nowhere in applicant's invention is

disclosed the claimed, "a sensitivity selector including a gear sensor".

In claim 12, 19, it is not clear what all is meant and encompassed by the phrase, "maximum allowable articulation angle". Is the maximum angle 20 deg, 30 deg, 50 deg, 90 deg., etc? Applicant does not indicate what angle is referred to as a "maximum allowable articulation angle".

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claim 12, 19, 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 12 and 19, the term, "maximum allowable" is a relative term. Thus, the term is indefinite.

In claim 20, the phrase, "is the same for different types of steering" is indefinite since applicant did not disclose the different types of steering referred to. Does applicant mean a steering in a front loader, skid steer loader, trailer, tractor, vehicles, etc?

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 4, 12, 15, 19, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zulu (6039133) in view of Brandt et al (6863144)

Regarding claim 4, Zulu (abstract, figs. 1&2) discloses a steering system for an articulated vehicle, comprising:

a) a first frame 12 (fig. 1);

b) a second frame (14, fig. 1) pivotally connected to the first frame 12 by a pivot joint (13, fig. 1);

c) at least one hydraulic cylinder (15, 16 fig. 1), connected between the first frame 12 and the second frame 14 and spanning the pivot joint 13, to articulate the first frame 12 and the second frame 14 relative to one another;

d) a proportional solenoid actuated hydraulic valve (43. 44, 46, 47, etc; col. 5, lines 34+) in communication with the hydraulic cylinders (15, 16) to control the flow of hydraulic fluid to the hydraulic cylinder;

e) an operator controlled steering input device 56 (col. 5, lines 51-56; col. 4, lines 34-67);

f) a processor (col. 3, lines 39-44) communicatively connected to the proportional solenoid valve and to the steering input device to control the valve in response to inputs from the steering input device; and

g) a sensitivity selector 79 (col. 5, lines 34-67; col. 6, lines 25-35) communicatively connected to the processor to provide an input signal to the processor that causes the processor to vary the signal output to the valve in accordance with the input signal from the sensitivity selector.

On the other hand, Zulu did not particularly disclose a sensitivity selector, wherein a setting of said sensitivity selector is determined by what gear the vehicle is in.

However, Brandt et al (figs. 2-4, 9-14; col. 4, lines 58-67; col. 5, lines 38-67; col. 2, lines 5-10) disclose a steering system for a work vehicle comprising a sensitivity selector, wherein the sensitivity selector includes a gear selector sensor for determining a desired steering sensitivity setting, which is a desired steering response to a given operator input to a steering input device, the sensitivity selector being communicatively connected to a processor to provide an input signal to the processor that causes the processor to vary the signal output to a valve in accordance with the input signal from the sensitivity selector, wherein a setting of said sensitivity selector is determined by what gear the vehicle is in.

Therefore, it would have been obvious to one of ordinary skill in the art of work machines to modify the Zulu device as taught by Brandt et for the purpose of varying steering modes of operation in different working conditions.

Regarding claim 12, Zulu (abstract, figs. 1&2) discloses a steering system for an articulated vehicle, comprising:

a) a first frame 12 (fig. 1);

b) a second frame (14, fig. 1) pivotally connected to the first frame 12 by a pivot joint (13, fig. 1);

c) at least one hydraulic cylinder (15, 16 fig. 1), connected between the first frame 12 and the second frame 14 and spanning the pivot joint 13, to articulate the first frame 12 and the second frame 14 relative to one another;

d) a proportional solenoid actuated hydraulic valve (43. 44, 46, 47, etc; col. 5, lines 34+) in communication with the hydraulic cylinders (15, 16) to control the flow of hydraulic fluid to the hydraulic cylinder;

e) an operator controlled steering input device 56 (col. 5, lines 51-56; col. 4, lines 34-67);

f) a processor (col. 3, lines 39-44) communicatively connected to the proportional solenoid valve and to the steering input device to control the valve in response to inputs from the steering input device;

g) a sensitivity selector 79 (col. 5, lines 34-67; col. 6, lines 25-35) communicatively connected to the processor to provide an input signal to the processor that causes the processor to vary the signal output to the valve in accordance with the input signal from the sensitivity selector; and

an operator input device communicatively connected to the processor for allowing an operator to input a tire size.

On the other hand, Zulu did not particularly disclose a sensitivity selector, wherein a setting of said sensitivity selector is determined directly by an operator.

However, Brandt et al (figs. 2-4, 9-14; col. 4, lines 58-67; col. 5, lines 38-67; col. 2, lines 5-10) disclose a steering system for a work vehicle comprising a sensitivity selector, wherein the sensitivity selector determines a desired steering sensitivity setting, which is a desired steering response to a given operator input to a steering input device, the sensitivity selector being communicatively connected to a processor to provide an input signal to the processor that causes the processor to vary the signal output to a valve in accordance with the input signal from the sensitivity selector, wherein a setting of said sensitivity selector is determined by an operator.

Therefore, it would have been obvious to one of ordinary skill in the art of work machines to modify the Zulu device as taught by Brandt et for the purpose of varying steering modes of operation in different working conditions.

Regarding claim 15, Zulu (abstract, figs. 1&2) discloses the steering system for an articulated vehicle as recited in claim 12, wherein the processor controls the valve to slow down articulation as the maximum articulation angle is approached.

Regarding claim 19, Zulu (abstract, figs. 1&2) discloses a steering system for an articulated vehicle, comprising:

a) a first frame 12;

b) a second frame 14 pivotally connected to the first frame by a pivot joint;

c) at least one hydraulic cylinder (15, 16), connected between the first frame and the second frame and spanning the pivot joint, to articulate the first frame and the second frame relative to one another;

d) a proportional solenoid valve (43. 44, 46, 47, etc; col. 5, lines 34+) in communication with the hydraulic cylinders to control the flow of hydraulic fluid to the hydraulic cylinder;

e) an operator controlled steering 56 input device; f) an input device for an operator to input tire size;

g) a processor 48 communicatively connected to the proportional solenoid valve and to the steering input device to control the valve in response to inputs from the steering input device; h) wherein the processor controls the valve so as not to exceed a maximum allowable articulation angle between the first and second frames which the processor sets based on the tire size input by the operator (columns 5-8).

Regarding claim 20, Zulu (abstract, figs. 1&2) discloses a steering system for an articulated vehicle, comprising:

a) a first frame 12;

b) a second 14 frame pivotally connected to the first frame by a pivot joint 13;

c) at least one hydraulic cylinder (15, 15), connected between the first frame and the second frame and spanning the pivot joint, to articulate the first frame and the second frame relative to one another;

d) a proportional solenoid valve (43. 44, 46, 47, etc; col. 5, lines 34+) in communication with the hydraulic cylinders to control the flow of hydraulic fluid to the hydraulic cylinder;

e) an operator controlled steering input device 56;

f) a processor48 ;

g) an interface 57 (fig. 2; col. 5, lines 17-20) operatively connecting the steering input device to the processor 48;

h) wherein the processor 48 operates the proportional solenoid valve in response to inputs from the steering input device (col. 5, lines 47-67);

i) wherein 57 the interface is the same for different types of steering input devices.

12. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zulu (6039133) in view of Nystuen et al (4771851)

Regarding claim 12, Zulu (abstract, figs. 1&2) discloses a steering system for an articulated vehicle, comprising:

a) a first frame 12 (fig. 1);

b) a second frame (14, fig. 1) pivotally connected to the first frame 12 by a pivot joint (13, fig. 1);

c) at least one hydraulic cylinder (15, 16 fig. 1), connected between the first frame 12 and the second frame 14 and spanning the pivot joint 13, to articulate the first frame 12 and the second frame 14 relative to one another;

d) a proportional solenoid actuated hydraulic valve (43. 44, 46, 47, etc; col. 5, lines 34+) in communication with the hydraulic cylinders (15, 16) to control the flow of hydraulic fluid to the hydraulic cylinder;

e) an operator controlled steering input device 56 (col. 5, lines 51-56; col. 4, lines 34-67);

f) a processor (col. 3, lines 39-44) communicatively connected to the proportional solenoid valve and to the steering input device to control the valve in response to inputs from the steering input device; and

g) a sensitivity selector 79 (col. 5, lines 34-67; col. 6, lines 25-35) communicatively connected to the processor to provide an input signal to the processor that causes the processor to vary the signal output to the valve in accordance with the input signal from the sensitivity selector.

On the other hand, Zulu did not particularly disclose a sensitivity selector, wherein the setting of said sensitivity selector is determined directly by an operator.

However, Nystuen et al (figs. 1, 10, col. 7, lines 55-62) disclose a steering system for a work vehicle comprising a sensitivity selector, wherein the sensitivity selector determines a desired steering sensitivity setting, which is a desired steering response to a given operator input to a steering input device, the sensitivity selector being communicatively connected to a

processor to provide an input signal to the processor that causes the processor to vary the signal output to a valve in accordance with the input signal from the sensitivity selector, wherein a setting of said sensitivity selector is determined by an operator.

Therefore, it would have been obvious to one of ordinary skill in the art of work machines to modify the Zulu device as taught by Nystuen et for the purpose solely steering soly in an articulation mode as desired by an operator. It further would have been obvious to modify Zulu for the of varying steering modes of operation in different working conditions (seeNystuen col. 9, lines 13-55; col. 4, lines 19-54).

MPEP 2114.

The statement of intended use or field of use, "for determining a desired", "to control....., in response to", "to vary the signal ....in accordance with the", "wherein, the setting of.....is determined by", etc clauses are essentially method limitation or statement of intended or desired use. Thus, the claim as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 512 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647. See MPEP § 2114 which states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ 2nd 1647.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531.

Apparatus claims cover what a device is not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

The prior art anticipate the structural limitations in the apparatus claims. Even if the prior art did not perform the method limitations recited in the apparatus claims, which the examiner is not conceding, it is believed that the structural arrangement in the prior art is capable of performing the method limitation recited in the apparatus claims.

Applicant cant may overcome the MPEP 2114 rejection by changing for example, "a gear selector sensor for determining a" to --a gear selector configured to determine a--; "the sensitivity selector being communicatively connected to the processor to provide an input signal" to -- the sensitivity selector being communicatively connected to the processor and configured to provide an input signal to--, etc.

Response to Arguments

13. Applicant's arguments with respect to claim 5/7/07 have been considered but are all not persuasive.

Applicant's arguments drawn to a desired steering sensitivity selector", "coarse mode, fine mode, automatic mode" have been removed; however, the phrase "a sensitivity selector including a gear selector sensor" has been rejected.

Applicant's argument drawn to "maximum allowable angle" is not convincing. The term maximum allowable" is relative and thus indefinite. However, the prior disclose the claimed limitation since the prior art disclose determining angle. In addition, the phrase is a relative term.

Applicant's argument with respect to "is the same for different types of steering input devices" is not convincing because if the limitation is broad to encompass every imaginable or all types of steering input devices including the prior art input devices, the invention will not work because applicant's invention does not apply to the prior art system mentioned in the background section of the specification.

Applicant's arguments drawn to, "priority of flow" is moot since the limitation is included in new claim 24. Claim 24 has been restricted by original presentation.

Applicant's argument that the prior art does not disclose a sensitivity selector as claimed is not convincing. It is noted that the actual phrase is, "a sensitivity selector including a gear sensor". The phrase is new matter. The examiner submits that the applicant disclosure (figs. 1; sections 30 and 31) shows a an operator *input device 110 which includes a steering sensitivity selector*. Applicant's disclosure further illustrates *a gear selector sensor 80*. Nowhere in applicant's invention is disclosed the claimed, "a sensitivity selector including a gear sensor".

Applicant argues that Zulu does not disclose "a sensitivity sensor for determining a desired steering sensitivity setting", but that Zulu disclose an articulated angle sensor. The examiner disagrees. The angle of articulation disclosed by Zulu provides a determination of haw sensitive a steering is. A very sensitive steering as known in the art could have produce a large angle or articulation and vice versa. It is further noted that the second prior art Brandt et al

disclose "a sensitivity sensor for determining a desired steering sensitivity setting" as pointed out above. Applicant is referred to Brandt (figs. 2-4, 9-14; col. 4, lines 58-67; col. 5, lines 38-67; col. 2, lines 5-10).

The applicant further argues that tire size is not inputted in the prior art. The examiner disagrees. The prior art takes into consideration or determines the steering mode (including angles) and kind of work the vehicle will perform depending on the tire size.

The applicant further argues about maximum articulation. As pointed out above, the term is a relative term. However, the prior art teach about angles by which to turn the steering.

Applicant's argument that the prior art does not disclose the limitation "the interface is the same for different types of steering input devices" is not convincing. It is believed that the prior art anticipates the limitation since the prior art does not limit application of the prior art patent to other steering types. The argued limitation is rejected above.

Applicant's arguments are drawn to method limitations in an apparatus claim. Applicant is referred to the MPEP 2114 rejection cited above.

Arguments with respect to claims 23 and 24 are moot in view of the restriction by original presentation.

Applicant failed to respond to all the rejections, particularly the 103 rejection with respect to Nystuen (4771851), and MPEP 2114 rejection.

It is believed that the rejections are proper and stand.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronnie Mancho whose telephone number is 571-272-6984. The examiner can normally be reached on Mon-Thurs: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ronnie Mancho
Examiner
Art Unit 3663

7/22/2007

JACK KEITH
SUPERVISORY PATENT EXAMINER